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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/699,648

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Hiroshi Furukawa

P/1912-18

1406

7590

05/16/2005

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EXAMINER

BLOUNT, STEVEN

ART UNIT

PAPER NUMBER

2661

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/699,648

Applicant(s)

FURUKAWA ET AL.

Examiner

Steven Blount

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✓

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 29 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informality: in the second to last line, the word "is" should be inserted between the words "signal" and "based".

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 14 and 18 - 36 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 6,504,832 to Koo et al in view of U.S. patent 5,491,837 to Haartsen.

With regard to claim 1, Koo et al teaches generating quasi-orthogonal code through the use of a Walsh code in col 7 lines 24 – 31. Koo et al also teaches generating a long code in col 7, lines 37+. In line 39, it is stated that the long (scrambled) code is multiplied by the quasi-orthogonal code "to provide channelization". See also col 9, lines 65+.

Beginning in col 9, line 34, a channel assigning procedure is described. In col 10, lines 37+, assigning priorities to codes having "(3) a higher priority (is) given to a fundamental channel or a control channel on which important control channel information should be transmitted with less errors." Spreading is discussed in col 7, line 44 – 47. Although it appears that this priority appears to be assigned to a Walsh code alone, the examiner believes that it would be obvious to one of ordinary skill in the art to apply this prioritization scheme to the combined long code/quasi-orthogonal code scheme mentioned above.

The examiner notes that, in addition to having the long code multiplied by the quasi-orthogonal code, it is stated in col 10, lines 2+, that a quasi-orthogonal code mask and Walsh code are “mixed” (col 10, line 2) to generate a quasi-orthogonal code. These quasi-orthogonal codes are assigned based on priority as described in col 10, lines 34+. The examiner believes that, while not explicitly stated, “mixing” is an obvious form of multiplying.

It is additionally noted that in col 10 lines 33+, three methods of code assignment are discussed, including a third wherein “a higher priority is given to a fundamental channel or control channel on which important control information should be transmitted with less errors. The channel priority can be adjusted as needed.

While Koos teaches the invention as described above, Koos does not teach determining priority for the combined code for each signal based on a channel quality value measured by the mobile station. This is taught in Haartsen. See col 5 lines 30+, Col 8 lines 40+, and col 10 lines 27+.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have measured the channel quality in Koos at the mobile station and determined priority for the combined codes based on these measurements, in light of the teachings of Haartsen, in order to provide a more accurate means for determining the required priority values based on environmental conditions.

With regard to claim 2, it would be obvious to extend the teachings of Koo/Haartsen to a system comprised of more than one mobile station.

With regard to claim 3, see the discussion of setting priority in Haartsen.

With regard to claim 4, threshold values are discussed in col 9 lines 55+ of Haartsen.

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With regard to claim 5, see discussion above and note that it is obvious to have the combined code have a higher priority as the first code goes higher, since the first and second codes are multiplied together.

With regard to claim 6, see discussion of the rejection of claims 4 and 5.

With regard to claim 7, s/n is a transmission quality, as is bit rate.

With regard to claims 8 – 11, note the above, particularly the rejection of claim 1 relating to s/n and calculation of priority.

With regard to claims 12 – 14, one of ordinary skill in the art would realize that the transmission rate and its associated error rate are related to the s/n oration discuss in col 7 lines 5+, col 7 lines 65+, and col 9 lines 55+.

With regard to claims 18 – 19, see col 4 lines 48+.

With regard to claim 20 - 22, see interference power is discussed in Haartsen. See col 8 lines 30+.

With regard to claim 23, see discussion of s/n ratio above, and further note that using power is discussed in col 8 lines 30+ as noted above.

With regard to claim 24, quasi-orthogonal code is similar to orthogonal code.

With regard to claim 25, note the use of Walsh code.

With regard to claim 26, the means for allocating the second code, assigning priority, allocating the combined code, and sending the transmission signal are all discussed above.

With regard to claims 27 – 36, the mobile measuring the quality and transmitting this data to the base station, setting priority of the first and second codes, and determining threshold values to set the channel quality values is discussed above.

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4. Claims 15 - 17 and 37 - 39 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 6,504,832 to Koo et al in view of U.S. patent 5,491,837 to Haartsen as applied to claims 1 - 14 and 18 - 36 above, and further in view of U.S. patent 6,421,335 to Kilkki et al.

With regard to claims 15 - 17 and 37 - 39, Koo et al/Haartsen teach the invention as described above, but do not teach determining the priority based on the number of users. This is taught in Kilkki et al, which additionally teaches a similar priority determination scheme based on signal to noise ratio. See col 3 lines 65+.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Koo et al/Haartsen with a method for determining priority based on a number of users, in light of the teachings of Kilkki et al, in order to provide a method for determining the said priority in a more accurate manner.

5. Applicants remarks are moot in view of the new grounds of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Blount whose telephone number is 571-272-3071. The examiner can normally be reached on M-F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Chau Nguyen, can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ajit Patel
Primary Examiner

SB


5/8/05